

THE RISING TIDE OF FATTY LIVER DISEASE IN CALIFORNIA'S CENTRAL VALLEY: A TRANSIENT ELASTOGRAPHY EXPERIENCE

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Background: Non-alcoholic fatty liver disease (NAFLD) affects over 30% of the United States population and is projected to become a leading cause of chronic liver disease by 2020.

Overtime, NAFLD can lead to the development of non-alcoholic steatohepatitis, cirrhosis, and hepatocellular carcinoma. Therefore, early detection and risk stratification are crucial in its management. Vibration controlled transient elastography (VCTE) is a sound wave based technology that allows for noninvasive assessment of hepatic fibrosis and steatosis. It can be done repeatedly to assess progression of disease and effectiveness of intervention.

Methods: This is a retrospective review of electronic health records of patients that have undergone VCTE at CRMC, a 685-bed tertiary referral center caring for a medically underserved population of greater than 3 million people. The following variables were collected: age, gender, body mass index, past medical history, liver enzymes and function tests, lipid panel, hemoglobin A1C, platelets, INR, albumin, AFP, viral hepatitis markers, iron, ferritin, autoimmune markers and VCTE fibrosis and steatosis scores.

Results: 728 patients were included in the study; age range 18-97, 43.4% men and 56.6% women. NAFLD accounted for 435 (59.8%), hepatitis C for 115 (15.8%) and hepatitis B for 23 (3.2%) of the patients. Other etiologies included alcoholic liver disease (3.9%), primary biliary cholangitis (2%), autoimmune hepatitis (1.8%), cryptogenic (4%), and other rare etiologies (8%). These rarer cases included etiologies such as alpha-1 antitrypsin deficiency, splenic vein thrombosis, and idiopathic noncirrhotic portal hypertension. Advanced fibrosis (F3-4) was present in 252 patients (34.6%). Positive autoimmune markers were noted in 5.5% of the entire cohort. NAFLD patients had higher burden of metabolic risk factors than non-NAFLD patients. The average BMI, LDL, triglycerides, and hemoglobin A1C of NAFLD patients was 32 kg/m², 105 mg/dL, 159 mg/dL, and 6.5%, respectively versus 28.5 kg/m², 91 mg/dL, 117 mg/dL, and 5.9% for non-NAFLD patients.

Conclusion: Our study strongly supports the notion that NAFLD is emerging to be the leading cause of chronic liver disease in the United States likely disproportionately affecting medically underserved communities. The finding of concern is that 34.6% of patients were diagnosed with advanced fibrosis further emphasizing the importance of early screening and intervention to prevent significant morbidity and mortality in the vulnerable populations.